



CORRESPONDENCE

Comment on “Early Carotid Endarterectomy after Intravenous Thrombolysis for Acute Ischaemic Stroke, Bartolia MA et al. May 2009”

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Dear Editor,

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We read the article with great interest. The timing of carotid endarterectomy (CEA) post thrombolysis is an area requiring further evidence. Bartolia et al. found that performing early CEA in patients post thrombolysis could reduce the risk of recurrent stroke. The sample of 12 patients yielded a stroke and death rate of 8.3%.¹

We have an additional three similar cases in which early CEA (<10 days) post thrombolysis was performed. The selection criteria for these patients were; thrombolysis for acute ischaemic stroke, symptomatic severe stenosis of 70% or more and improvement in NIHSS post thrombolysis. All patients were free of peri-operative complications for up to 30 days with no patient experiencing a stroke or fatality.

Although the limited evidence reports positive results yielding low stroke and death rates for early CEA, post thrombolysis, the indication for surgery is unclear. A clearer understanding of which patients in this new group should be considered for CEA is required and if deemed necessary how crucial is the timing of the operation.

This new cohort of high risk patients in whom the risk of death and stroke is not yet properly quantified, poses a considerable organisational challenge for many vascular units. The limited number of cases in the literature does not yet provide a sensible evidence base in which to base issues of risk assessment and informed consent.

Reference

- 1 Bartoli MA, Squarcioni C, Nicoli F, Magnan PE, Malikov S, Berger L, et al. Early carotid endarterectomy after intravenous thrombolysis for acute ischaemic stroke. *Eur J Vasc Endovasc Surg* 2009 May;37(5):512–8.

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Response to Comments on: “Early Carotid Endarterectomy after Intravenous Thrombolysis for Acute Ischemic Stroke”

Dear Editor,

We appreciate the opportunity to respond to the thoughtful letter from Rashid et al. concerning our article “Early Carotid Endarterectomy after Intravenous Thrombolysis for Acute Ischemic Stroke”. Concerning the timing of carotid endarterectomy (CEA) after intra venous thrombolysis (IVT) we based our policy mainly on the reanalysis of NASCET and ECST results in 2004.¹ For neurological stable individuals, the authors demonstrated clearly that surgery provide the highest benefit over medical management when CEA is performed within the first two weeks after the patient’s last symptoms. In our opinion IVT may not change so much the natural history of atheromatous symptomatic carotid stenosis. Additionally, it has been also reported that the presence of a severe ipsilateral carotid stenosis was associated with poor clinical outcome after IVT and it might be recommended to adopt for those specific patients an aggressive reperfusion strategy.^{2,3} Finally, in our experience nine out of twelve patients had a remaining carotid stenosis $\geq 90\%$ after IVT. Restoring quickly a normal blood flow in a freshly recanalized vessel may prevent reocclusion and allow us to verticalize the patient maintained strictly supine until surgery to avoid any worsening of the symptoms due to cerebral hypoperfusion. Therefore, we recommend performing surgery after IVT as soon as possible following our strict criteria of operability which are more numerous compared to those applied by Rashid et al.

We agree that actually literature evidence remains extremely poor on this subject, and we may probably never have randomized control trials comparing immediate versus delayed CEA after IVT for stroke. However, we believe that in the near future we will observe in the literature some short series from high volume centers and meta analysis of them may provide sensible evidence base on the stroke and death rate that might be expected in such situation to provide better information to the patient.

References

- 1 Rothwell PM, Eliasziw M, Gutnikov SA, Warlow CP, Barnett HJ. Endarterectomy for symptomatic carotid stenosis in relation to clinical subgroups and timing of surgery. *Lancet* 2004;**363**(9413): 915–24.
- 2 Rubiera M, Alvarez-Sabin J, Ribo M, Montaner J, Santamarina E, Arenillas JF, et al. Predictors of early arterial reocclusion after tissue plasminogen activator-induced recanalization in acute ischemic stroke. *Stroke* 2005;**36**(7):1452–6.
- 3 Molina CA, Montaner J, Arenillas JF, Ribo M, Rubiera M, Alvarez-Sabin J. Differential pattern of tissue plasminogen activator-induced proximal middle cerebral artery recanalization among stroke subtypes. *Stroke* 2004;**35**(2):486–90.

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Comment on "Management of Limb Ischaemia in the Neonate and Infant" (*Eur J Vasc Endovasc Surg* 2009;38**:61–65). A Proposed Algorithm for Optimal Results.**

Dear Editor,

We read with great interest the excellent review by Arshad and McCarthy regarding management of limb ischaemia in the neonate and infant population.¹ As stated, systemic

heparinisation with/or without catheter directed or systemic thrombolysis, may allow initial limb salvage in the very young patient presenting with acute but non-limb-threatened ischaemia.¹

We recently presented our experience in the management of 23 children aged ≤ 13 years with extremity arterial trauma, reporting also some neonates and infants with a palpable proximal pulse and audible distal Doppler signals, who did well with anticoagulation alone.²

Surgical repair of arterial injuries in preschool children does not necessarily lead to restoration of distal pulses (in only 63% of all extremities) with limb-length discrepancy (LLD) recorded in 16% of patients in the long-term. Discouraging outcomes emerged after surgical intervention in patients, ≤ 2.5 years old, in which only 48% regained palpable pulses and LLD was observed in 15% of patients.² Thus, in the absence of severe limb ischaemia systemic heparinisation and/or thrombolysis is effective and long lasting. If distal Doppler signals are present, limb loss is rare, but limb shortening is a threat as children grow. Surgical treatment of such arterial injuries in neonates and infants might best be deferred in ischemic but non-threatened limbs.² The decision to intervene surgically in the very young children aged ≤ 3 years should be dictated by a definite threat of limb loss, while limb salvage with anticoagulation alone in case of borderline ischaemia should not be overlooked. A suggested algorithm, clarifies the management of acute limb ischaemia in children ≤ 3 -year old (Fig. 1).

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None.

References

- 1 Arshad A, McCarthy MJ. Management of limb ischaemia in the neonate and infant. *Eur J Vasc Endovasc Surg* 2009;**38**: 61–65.
- 2 Lazarides MK, Georgiadis GS, Papas TT, Gardikis S, Maltezos C. Operative and nonoperative management of children aged 13 years younger with arterial trauma of the extremities. *J Vasc Surg* 2006;**43**:72–6.

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